

# **EXHIBIT 50**

**An Introduction to Business Rules**  
Improving Performance through Decision Management

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October, 2009

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**CHUBB FICO**

U.S. DIST COURT – MN  
PLAINTIFF EXHIBIT  
**P-0193**

Case No. 16-cv-1054-DTS





## Business Rules Overview

CoE  
October, 2009

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## Current Blaze Implementations



SDLC Phases (Current State)							
SL#	Project Team	Architect	Define	Design	Development	Test	Deploy
1	Claims Processing Specialty Inventory						
2	CCI						
3	ARP1						
4	ARP2						
5	PARS						
6	PI						

☐ Completed  
☐ In Progress  
☐ Not started

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## CoE - Vision and Benefits



### Vision

- To provide services to the I.T. delivery teams that reduce risk and the cost profile of business rule implementations

### Goals of the Center of Excellence – Business Rules (COE-BR)

- Provides value to Chubb by providing solutions and support that reduces the overall lifecycle cost of a business rules implementation.
- Provides on-going metrics that provide visibility into its utilization and its ability to reduce overall project risk and cost profiles.
- Develop a overall strategy and approach for business rules solutions within Chubb.
- Engage with Project Teams to support the delivery of projects.

### Benefits & Results

- Increased business agility through broader rules adoption
- Increase the pace of rules skills development at Chubb while reducing risk to projects
- Increase the return on investment of rules-based implementations

### Failure to leverage Rules technology

- Increased total cost of ownership of applications portfolio
- Decreased agility and adaptability of the application portfolio

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## Business Rules EcoSystem Summary



### » Goals

- » Provide a high-level framework to select the "best-fit" rules technology option across the insurance value chain
- » Apply the framework on illustrative scenarios to ascertain the best-fit rule solutions

### » Extensive details on the model are provided in the package

- » **Summary Deck : BRCoE - WP - deck v1 5.ppt**
- » **Whitepaper : BRCoE Rules Ecosystem whitepaper**

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## BR Foundational Framework



### » Business Rules Frameworks

- » Provides a structured process for developing a business rules application from the early planning to the final delivery and maintenance of the application.
- » Create single knowledge repository and provides actionable, distilled insights on 'best practices' for rule-based development.
- » The guidelines and templates included in the framework aims to shorten the learning curve, drive consistencies in processes and reduce effort duplication
- » Helps to determine size, complexity and cost of the project
- » Enables efficiently harvest and analyze business rules by utilizing standard rules templates and guidelines
- » Defines business rules test strategy

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## BR CoE Wikipedia site



Phases	Scope	Define	Design	Develop	Test	Deploy
Role	Project Manager	Business Analyst	Rule Architect	Rule Writer	Quality Control	

- » All information regarding BR Framework is available on BR CoE Wiki site
- » Wiki site URL is [http://cbwiki.chubb.com/coe/index.php/Business\\_Rules\\_Foundational\\_Framework](http://cbwiki.chubb.com/coe/index.php/Business_Rules_Foundational_Framework)
- » Information on each page is organized and can be accessed either by SDLC phase, by individual's role in the project, or combination of both
- » Navigation bars on top and bottom of each page as shown on slide allow for easy navigation between the pages

BR CoE Framework	Phases					
Roles	Scope	Define	Design	Develop	Test	Deploy
Project Manager	Details	Details	Details	Details	Details	Details
Business Analyst	Details	Details	Details			
Rule Architect	Details	Details	Details	Details	Details	Details
Rule Writer/Developer			Details	Details	Details	Details
Quality Control			Details	Details	Details	Details

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## Agenda

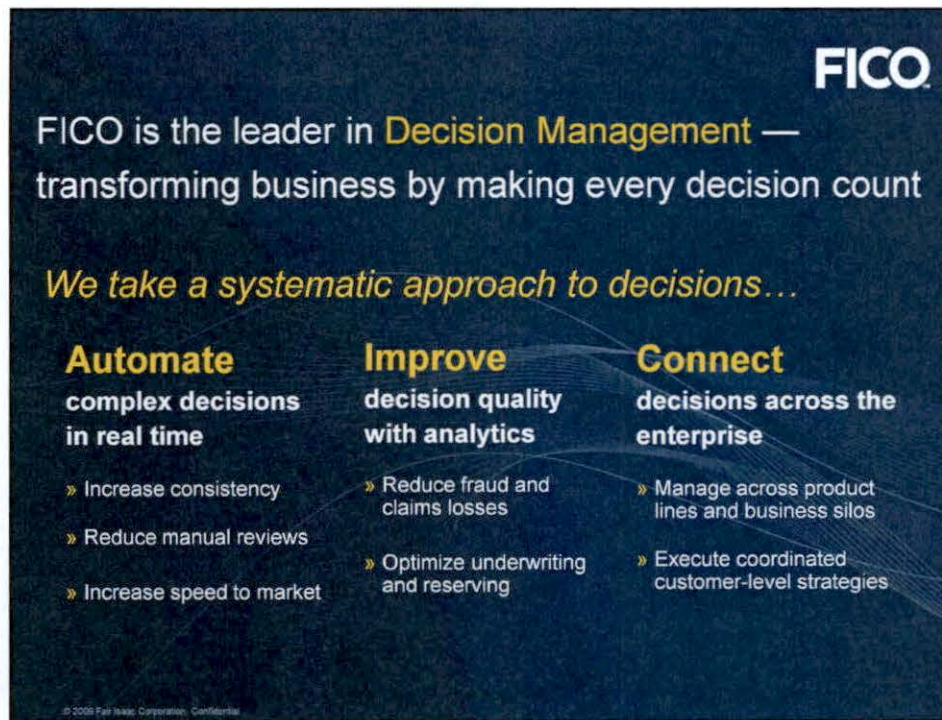
- » FICO Overview
- » Introduction to Decision Management
- » Enabling Decision Management
  - » Improve Agility & Consistency with **Business Rules Management**
- » Optional FICO Component Explanations
  - » Increase Precision with **Predictive Analytics**
  - » Find the Best Strategy with **Decision Optimization**
- » Questions



## FICO Overview



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A dark blue presentation slide for FICO. The FICO logo is in the top right corner. The main text reads: "FICO is the leader in Decision Management — transforming business by making every decision count". Below this, a yellow italicized line says "We take a systematic approach to decisions...". The slide is divided into three columns: "Automate complex decisions in real time", "Improve decision quality with analytics", and "Connect decisions across the enterprise". Each column has a list of three bullet points. At the bottom left, small text reads "© 2009 Fair Isaac Corporation. Confidential".

**FICO**

FICO is the leader in **Decision Management** — transforming business by making every decision count

*We take a systematic approach to decisions...*

<b>Automate</b> complex decisions in real time	<b>Improve</b> decision quality with analytics	<b>Connect</b> decisions across the enterprise
» Increase consistency	» Reduce fraud and claims losses	» Manage across product lines and business silos
» Reduce manual reviews	» Optimize underwriting and reserving	» Execute coordinated customer-level strategies
» Increase speed to market		

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We occupy a unique position in a growing field, Decision Management.

**We Work with Leaders Around the World**

**FICO**

<b>Financial Services</b>	Origination Risk Management Marketing Fraud Collections & Recovery	 Bancoer  BARCLAYS  Millennium  HSBC  GMAC  Lloyds TSB  DISCOVER  ICICI Bank  Deutsche Bank  BANK OF SCOTLAND  三井住友銀行
<b>Insurance</b>	Underwriting Claims Management Fraud Marketing	 AAA  AIG  NEW YORK LIFE  Kemper  GEICO DIRECT  ZURICH  CHUBB  NORWICH UNION
<b>Retail</b>	Marketing & Merchandising Credit Management Fraud	 Walmart  Sainsbury's  BEST BUY  Coca-Cola  PNC  Target  ConAgra Foods  MARKS & SPENCER
<b>Healthcare</b>	Revenue Cycle Management Fraud Marketing	 MERCK  Bristol-Myers Squibb  EDS  HEALTHWAYS  Pfizer  NOVARTIS  MCKESSON  GEHA

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## What is Decision Management?

*FICO's Point of View*



Decision Management (DM) is an approach to improve, automate and connect organizational decisions to enhance business performance through the application of a number of key technologies

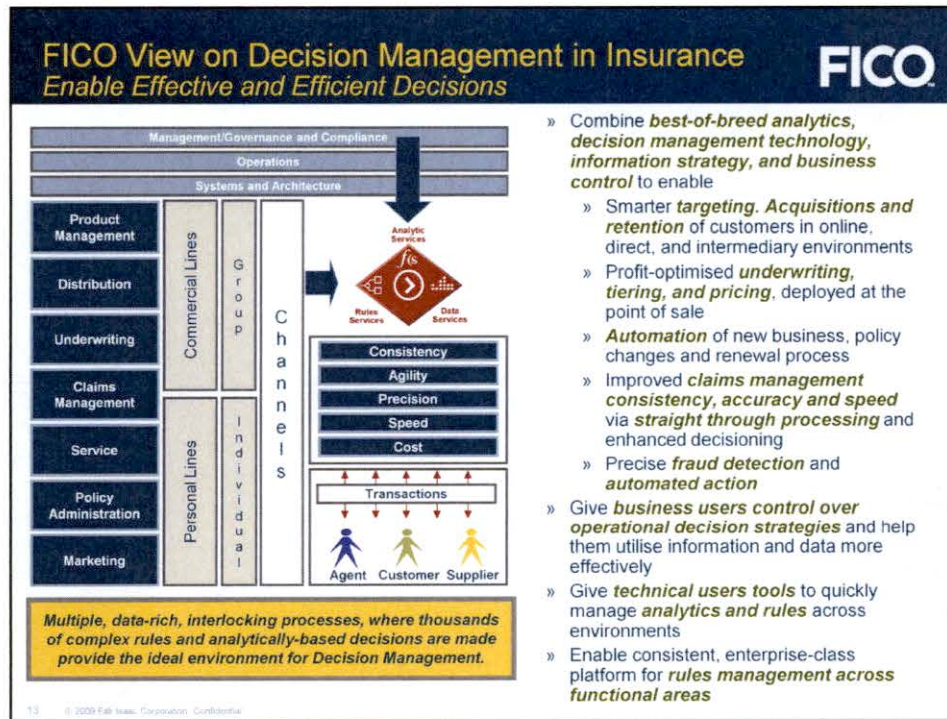
### DIMENSIONS OF DECISION MANAGEMENT

	<b>Precision:</b> accurate predictions permit more accurate actions and treatments allowing better management of risk, costs, losses, etc.
	<b>Consistency:</b> consistent decisions and customer treatment, driving a consistent customer experience regardless of contact or request
	<b>Agility:</b> flexible decisions and processes enables faster responses to changes in customer behavior, economic drivers, competition, regulation
	<b>Speed:</b> at the core of improvements in automated processes is the need to make decisions in real time
	<b>Cost:</b> control of decision unit and business costs improves overall business performance driving profitability

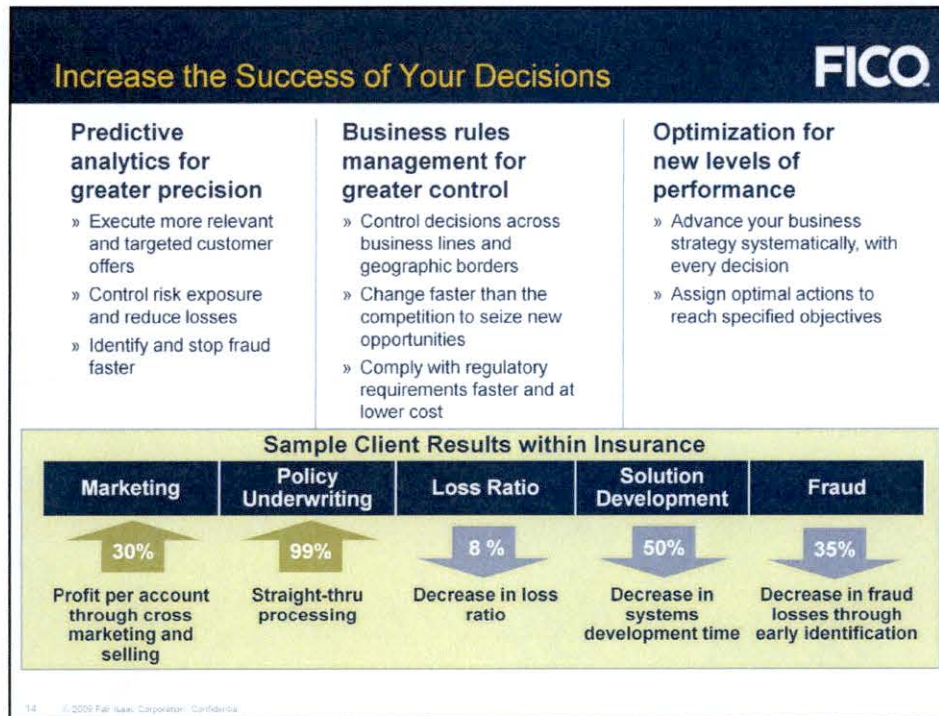
### DECISION MANAGEMENT ENABLING TECHNOLOGIES

	<b>Decision Control:</b> Business Rules Management (Blaze Advisor)
	<b>Analytics:</b> Predictive Modeling and Strategy Optimization
	<b>Data:</b> Access, Delivery and Transaction Processing

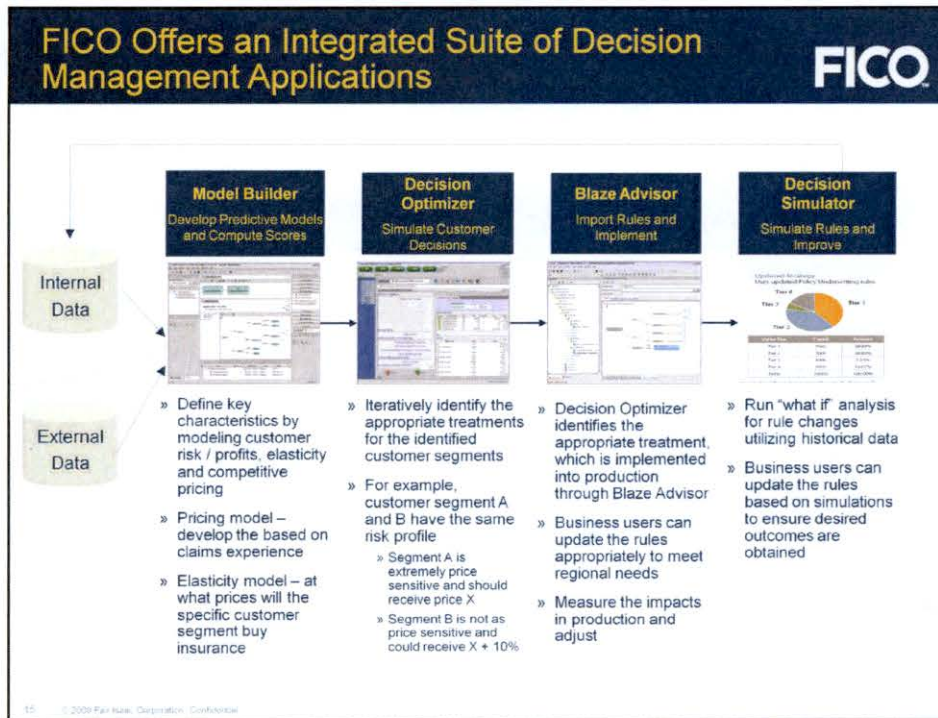
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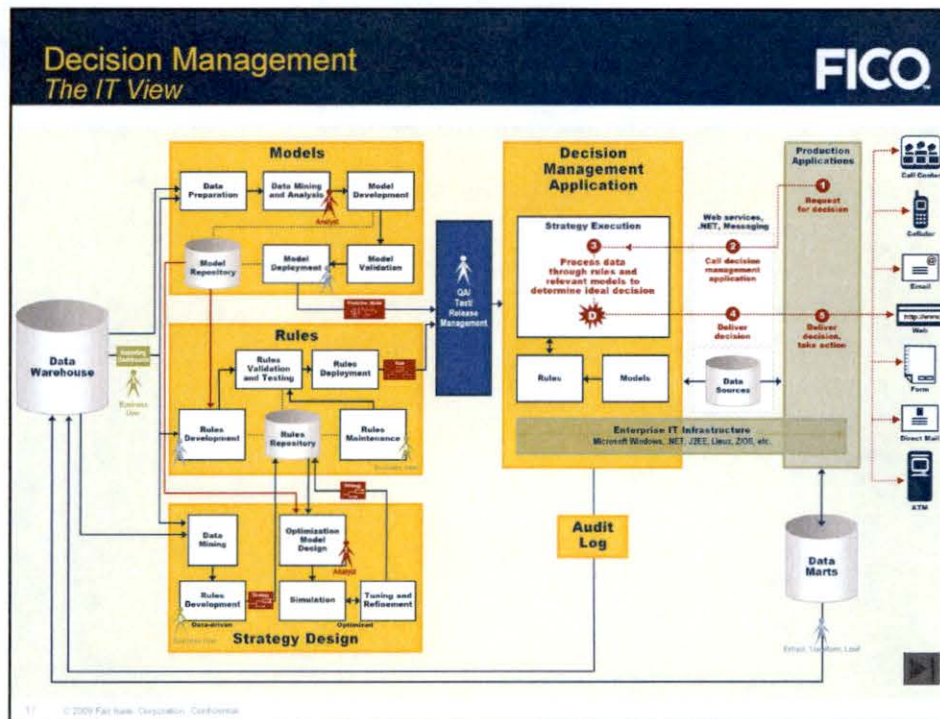


Our solutions are based on three core technologies. Any ONE of these technologies can deliver outstanding results – our sweet spot is integrating them to transform the way our clients make decisions.



FICO Technologies Help Insurers Achieve the Competitive Advantage of Connected Decisions	
FICO	
FICO Decision Management Solutions	Key Benefits to the New Business Process
<b>FICO Blaze Advisor Business Rules Management</b> 	<ul style="list-style-type: none"> <li>» Automates the underwriting process by incorporating a carrier's underwriting guidelines within the rules repository</li> <li>» Improves the agility of new business and product development processes by giving business managers more control</li> <li>» Allows for consistent decision making across the underwriting decision lifecycle</li> <li>» Allows carrier's to scale their business without the need to add additional underwriting staff</li> </ul>
<b>FICO Predictive Analytics</b>  (Industry-Standard Scores and Custom models)	<ul style="list-style-type: none"> <li>» Improves the precision of existing rating methodologies; assists existing underwriting systems to make more accurate decisions</li> <li>» Improves a carrier's ability to predict or anticipate a customer's reaction to discrete offers</li> <li>» Allows carriers to analyze customer acquisition and attrition patterns and make predictions based on those patterns to acquire and retain customers</li> </ul>
<b>FICO Decision Optimization</b> 	<ul style="list-style-type: none"> <li>» Improves a carrier's ability to develop business strategies based on an optimized view of business objectives and associated constraints</li> <li>» In some cases allows carriers to incorporate strategies real-time</li> </ul>

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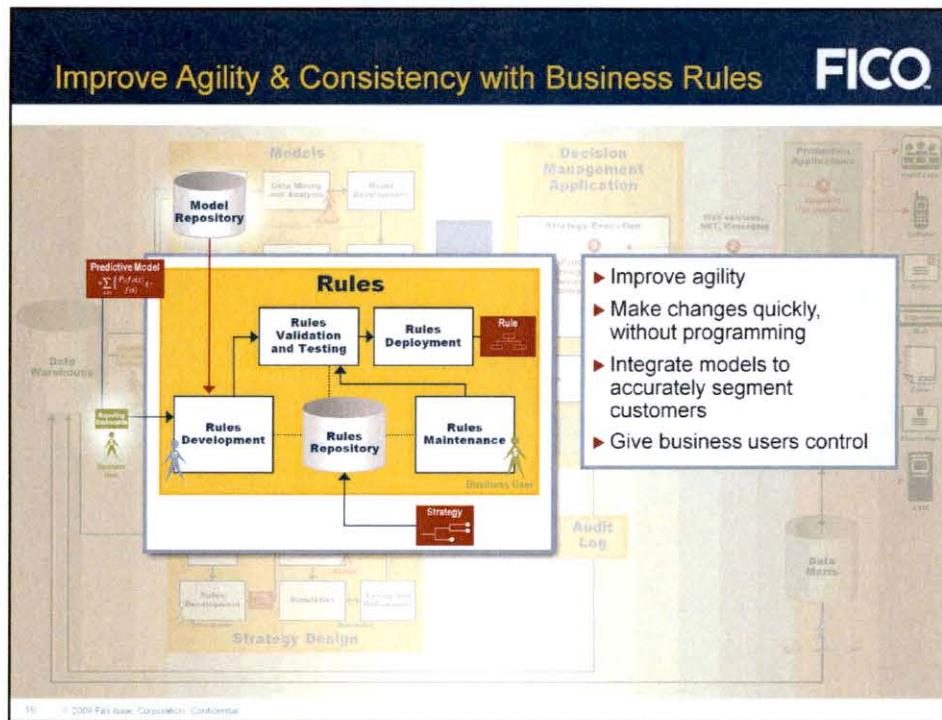




## Enabling Decision Management

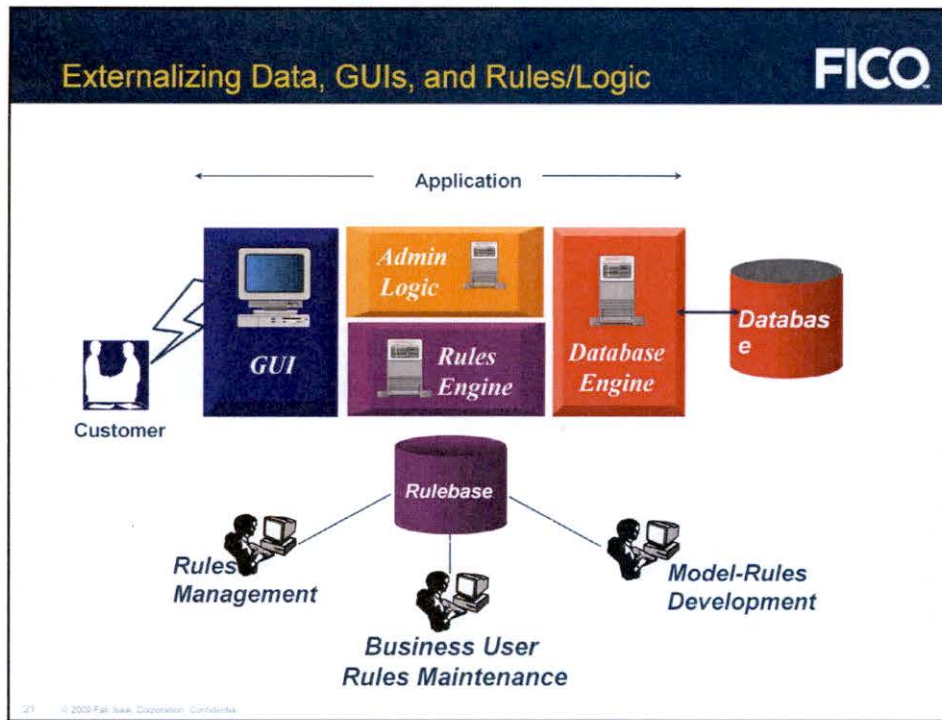
» Improve Agility & Consistency with Business Rules Management

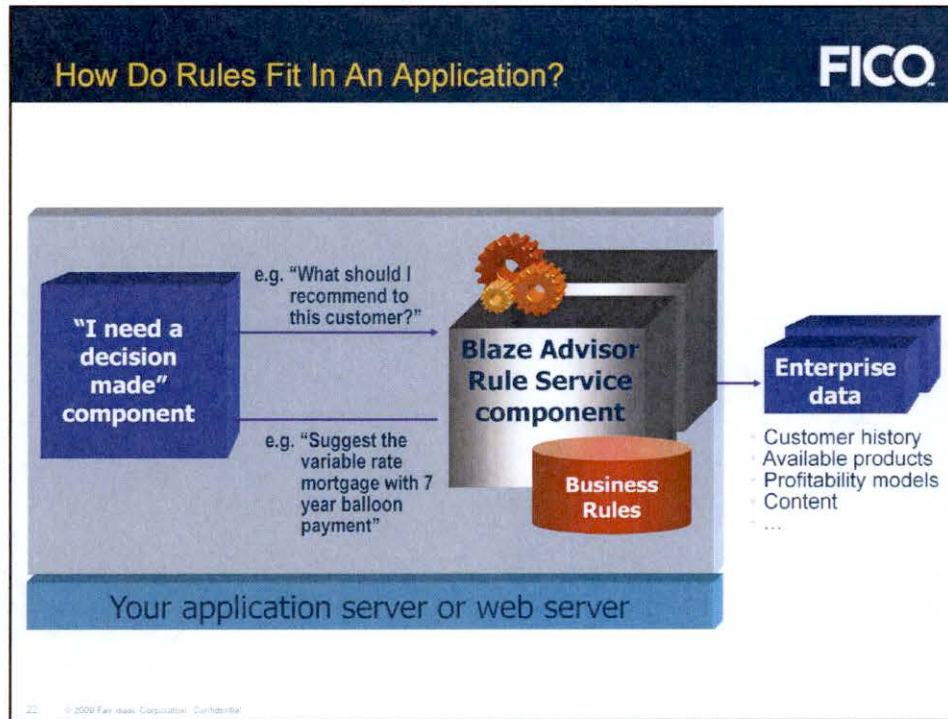
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## The Basic Process



- » Identify Decisions
- » Integrate Decision Services
- » Automate the decision with business rules
- » Empower the business to manage the rules
- » Analytically improve the rules
- » Add predictive insight
- » Optimize and adapt

- » While
  - » Using your software development lifecycle
  - » Building a single repository
  - » Managing testing and debugging

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#### Empower content authors with templates

- Provide flexible levels of control over content authoring
- Create complex templates by combining simpler templates
- Define templates once and re-use everywhere

#### Auto-generate content authoring environment from templates

- Rule Maintenance Application Generator automatically generates complete authoring applications from templates

Introducing FICO Blaze Advisor



**RULES MANAGEMENT TECHNOLOGY**

Software for Business Decision Process  
Management • Automation • Personalization

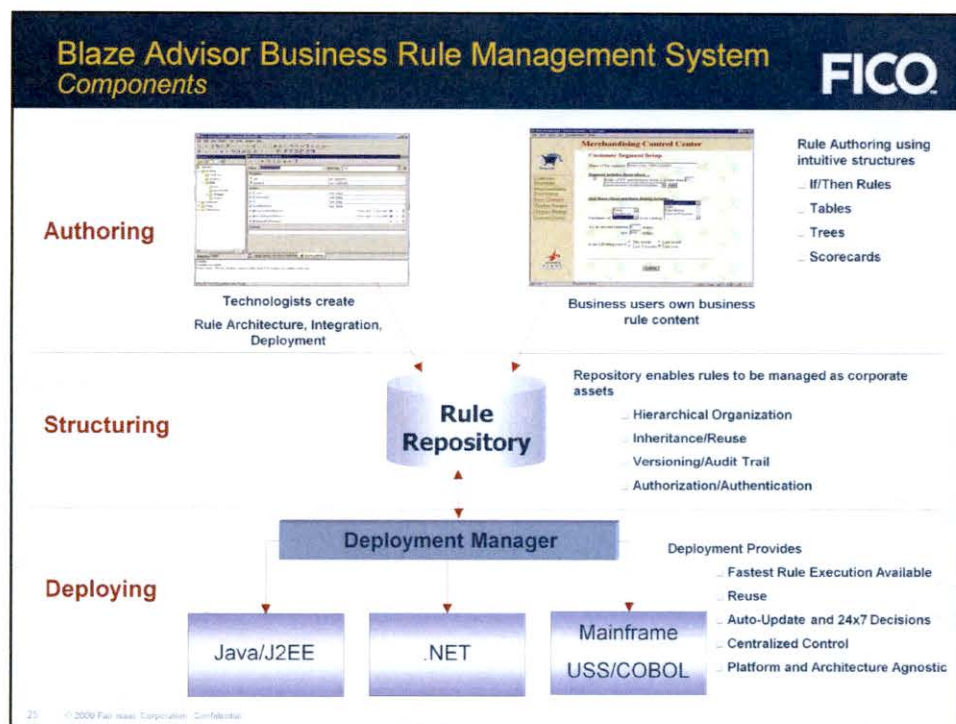
- » Uses the policies, practices, procedures of your organization
- » Delivers individual response to unique circumstances
- » Consistently applies business practices
- » Allows businessperson control of business operations
- » Reduces costs of training, staffing, programming, processing
- » Supports high volume, multi-user, 24x7 execution of rules

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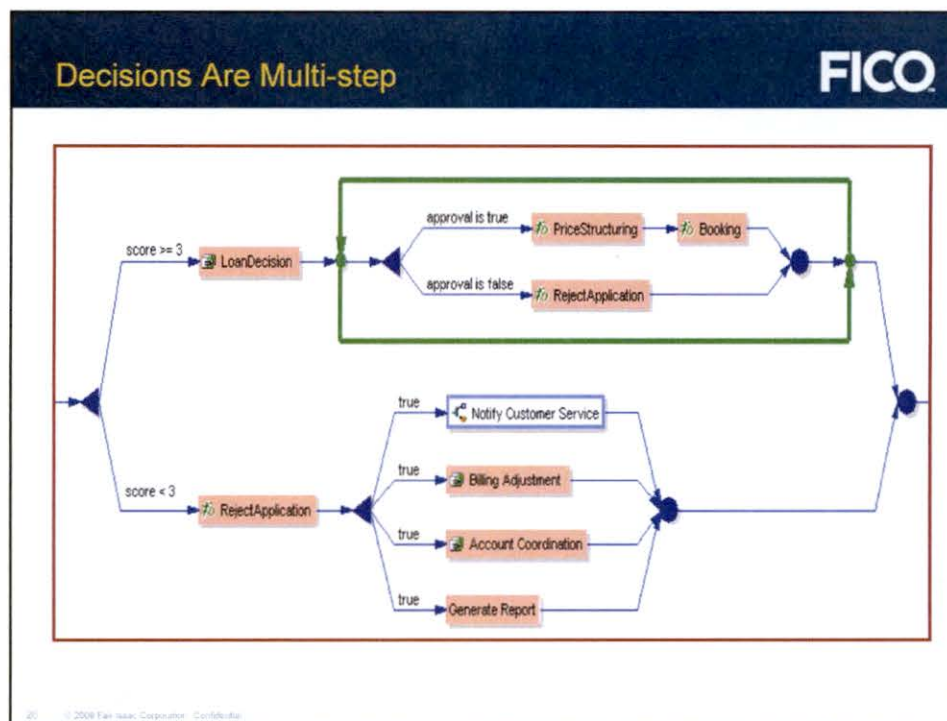
Blaze Advisor is the leading Rules management technology for managing and automating business decision separate the business rules from the complex programming code of their systems that control other aspects factors and reduce total cost of ownership in day to day operations.

Automating decisions is the idea of consistently applying the same business practices under the same cond









Business processes are multi-step and often complex

As an example of a complex business process – consider the pricing of insurance. Several steps are involved in coming up with a single number

Blaze Advisor handles rulebases of this level of complexity and much more.

Being able to define a process flow for rules is key. You must be able to define a sequence, drill down into more detail and specify the rules for each step to support not just business process automation (doing the same thing consistently, time and again), but “business process personalization” where the process can adjust to unique factors in individual situations.

Ruleflows are designed in Blaze Advisor. This layout is actually interpreted by the development environment and used to control the flow of execution. Ruleflows can include conditional branching to choose the next step, they can incorporate looping conditions to repeat steps until parameters are satisfied, and they can include calls to external functions or to other ruleflows, for complex functionality expressed in easy to interpret layers.

In the development environment, the ruleflow also acts as an entry point to the rulesets and their rules, by letting you click on a step to edit the underlying components.

FICO
What Rules Look Like in Blaze Advisor

If customer's debt exceeds customer's assets  
then set the approval\_status of customer's application to Declined

If order's purchaseDate is earlier than January 1, 2008  
then print("Your purchase is no longer eligible for return").

If (vehicle's age is between 0 years and 8 years)  
and (policyholder's age is between 21 years and 60 years)  
and (policyholder's number\_of\_claims does not exceed 3)  
Then set policyholder's case to "STANDARD"

If (plan's startDate is earlier than 6 months)  
and (customer's ytdAverageMinutes is greater than plan's minutes)  
then set customer's handsetMessage to "You are eligible for a new rate plan".

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Business rules are simply statements of the way you want to conduct business under different circumstances. Here are some examples, expressed in actual Blaze Advisor structured rule language - SRL... the "programming code" Blaze Advisor uses to write rules. Also, rules may be expressed in a number of other ways, many of which are graphical in nature. I'll show you these ways in the next few slides. You'll see that most rules have an "if x is true – then do y" structure to them. This is a natural way to think about business... "Under certain conditions, take an appropriate action." There are also "whenever x happens - then do y" type rules... these are useful for monitoring events and taking an action when something changes or passes a particular threshold. Take a look at the third example – this is an actual business rule being used by a Blaze Advisor customer in Malaysia.

## The Rule Syntax Has Power



If **at least** 2 children satisfy age < 8  
then set discount to 0.25.

If Product's ID **does not start with** "SPX"  
then the PromotionStatus of the Product is False.

If the name of the customer is **unknown**  
then print("Please enter your name").

If order's purchaseDate **is earlier than** 'January 1, 2004'  
then print("Your purchase is no longer eligible for return").

SeniorMale **is any** customer **such that** (age > 65 and gender is Male).

If the **max** of the weight **of every** bag is less than 100  
then the status of the cargo is "OK"

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## Which Would You Rather Maintain?



If customer is GoldCustomer  
and Home\_Equity\_Loan\_Value is more than \$100,000  
then special\_loan\_discount = 0.5%

```
public class Application {
    private Customer customers[];
    private Customer goldCustomers[];
    ...
    public void checkOrder() {
        for (int i = 0; i < numCustomers; i++) {
            Customer aCustomer = customers[i];
            if (aCustomer.checkIfGold()) {
                numGoldCustomers++;
                goldCustomers[numGoldCustomers] = aCustomer;
                if (aCustomer.getCurrentOrder().getAmount() > 100000)
                    aCustomer.setSpecialDiscount (0.005);
            }
        }
    }
}
```

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## Changing the Rules



» Rule maintenance must be:

- » A business function
- » Familiar
- » Integrated
- » Secure & controlled

I want to relax my contract terms violation policy

I want to be able to promote a new product combination

So you business-types want to be able to change your business rules?

I need to add the new regulations



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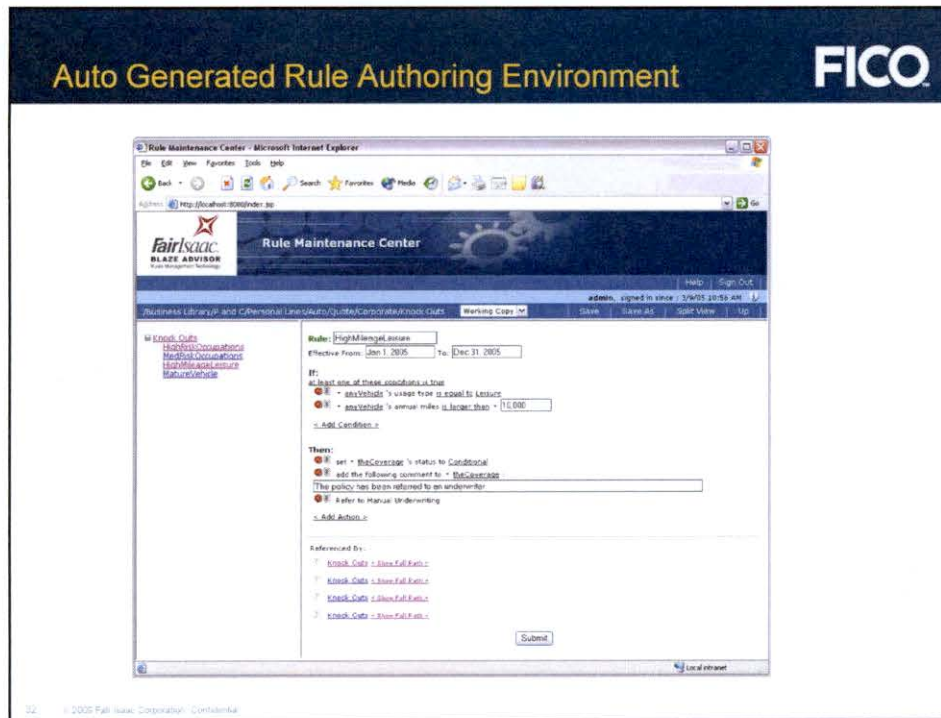
**Flexible Authoring:**  
*For True Business Rule Management*



- » Centralized and consistent rules management across platforms
  - » Author platform independent rules
  - » Deploy decision services to any platform from a single definition
- » Simplified authoring for subject matter expert
  - » Shield authors from OM concepts and programming structures
  - » Auto-generate content authoring environment
  - » Model business processes graphically
- » Complete set of validation tools
  - » Full set of tools to graphically explore relationships between rules and data
  - » Automatically generated reports for conflicts, performance, and project contents
  - » Search repository using metadata and custom criteria
- » Governed rule access
  - » Read/Write privileges by role
  - » Limit content views by user

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**If/Then Rules** **FICO**

**Rule Maintenance Center**

Rules/Defining Flow/Issue/Rule Instance: **Shipping Costs**

Rule Name: **R**

Reason Number: **P21**

Effective From: **Jan 1, 2004**

Effective To: **Jan 1, 2005**

If:

At least one of these conditions is true:

- the dollar diff of exp of - **insurance** is greater than - **500**
- the percent diff of exp of - **insurance** is less than - **20**

+ Add Condition +

Then:

- set the system decision of - **insurance** to **R**

+ Add Action +

Submit

**Create New Contingency Plans**

First Contingency Type:

Weather Delay **Add to List**

Selected:

Mechanical Delay (Air Transport)

When Customer Service Level Agreement is:

Custom (Per Contract) **Add**

For Custom SLA, Select Customer name:

**Sam**

And Current Customer Satisfaction Status:

Low **Add**

Then Select Mitigation Procedures:

- ☒ Recalculate Shipping Route
- ☐ Inform Customer of Delay caused by Hold
- ☐ Offer Customer Discount
- ☐ Implement Required Service Level Contingency

And Discount on Future Shipment:

10% **Platinum** **Add**

Gold Discount = 25%

Submit New Rule:

Submit Cancel

Document Name

- English rule authoring
  - Predefined choices
  - Free-Form text entry
  - Auto Complete
- Formula Builder

## Decision Tables



- » Charts and lookups
- » Match business processes and existing methods
- » Easy definition and maintenance
- » Reduce numbers of independent business rules
- » Applications such as shipping fees, actuarial tables, etc.
- » Filters to control display
- » Visual table comparison

Dynamic Filtering / Western\_Region\_Commission\_Rate\_Table [Instance File]

Decision Table: Western\_Region\_Commission\_Rate\_Table

Content Properties XML Source


	Units sold	Commission Rate
(Show All)		
Consignment	0 <= < 10,000	0.06
House Brand	10,000 <= < 50,000	0.1
Supplier Brand	>= 50,000	0.125
Supplier Brand	0 <= < 10,000	0.065
Supplier Brand	10,000 <= < 50,000	0.12
Supplier Brand	>= 50,000	0.1525
House Brand	0 <= < 10,000	0.08
House Brand	10,000 <= < 50,000	0.15
House Brand	>= 50,000	0.179

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## Scorecards for Additive Models



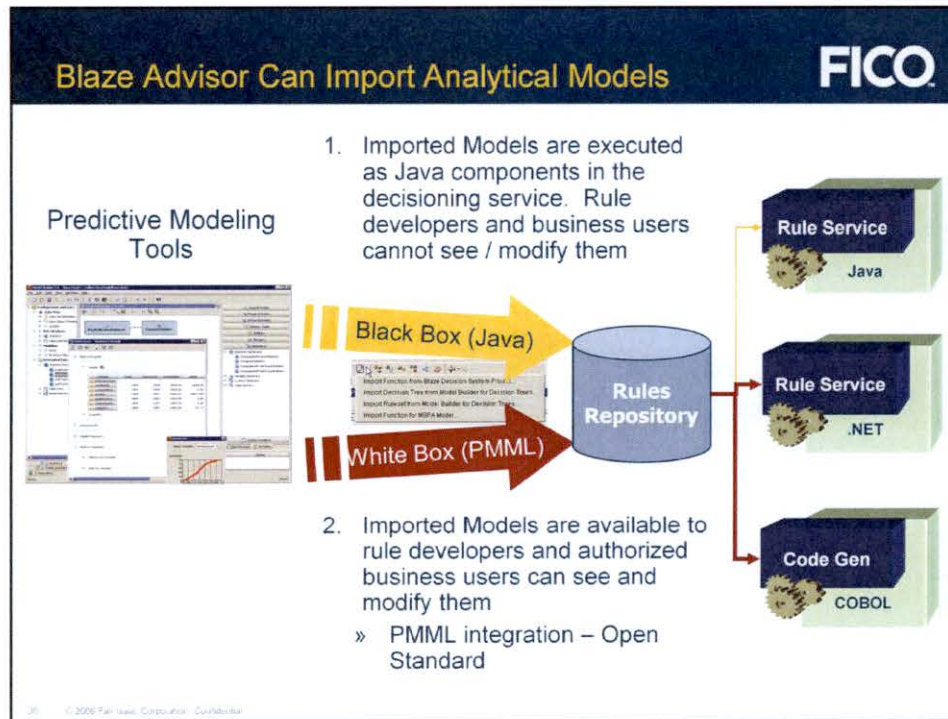
- » Easy to deploy analytic models
- » Expose to business users to view and/or maintain models

Characteristic		Baseline Score		Description			
netFractionInstallment		-13		Net Fractional Installment			
percentLinesNeverDelq		19		Percent Trade Lines Never Delq			
	Bin	Range	Description	Score	Unexpected	Reason Code	Reason Message
	0-64	0 <= . < 64	0-64	4	<input type="checkbox"/>	TL	Percent Trade Lines Never Delq
	65-74	65 <= . < 74	65-74	18	<input type="checkbox"/>	TL	Percent Trade Lines Never Delq
	75-79	75 <= . < 79	75-79	18	<input type="checkbox"/>	TL	Percent Trade Lines Never Delq
	80-84	80 <= . < 84	80-84	20	<input type="checkbox"/>	TL	Percent Trade Lines Never Delq
	85-89	85 <= . < 89	85-89	24	<input type="checkbox"/>	TL	Percent Trade Lines Never Delq
	90-94	90 <= . < 94	90-94	26	<input type="checkbox"/>	TL	Percent Trade Lines Never Delq
	95-99	95 <= . < 99	95-99	26	<input type="checkbox"/>	TL	Percent Trade Lines Never Delq
	100	100	100	26	<input type="checkbox"/>	TL	Percent Trade Lines Never Delq
	All Other			19	<input checked="" type="checkbox"/>	TL	Percent Trade Lines Never Delq

15	numOpenLinesWithBal	14	Num RevlOpen Trade Lines With Balance
16	avgMonthsInFile	45	Average Months In File
17	numTradesHigh	21	Num Bk/Natl Trades w/Bal 75% High Credit
18	numLinesOpenedLast12	11	Num Trade Lines Opened in Last 12 Mos
19	numInquiriesLast7	15	Num Inquiries 0-5 Excluding Last 7 Days
20	netFractionRevolving	19	Net Fraction Revolving Burden
21	monthsSinceLastDelq	12	Months Since Most Recent Delq
22	numTL60_Last12	22	Num TL 60+ Ever & Denog Pub Rec

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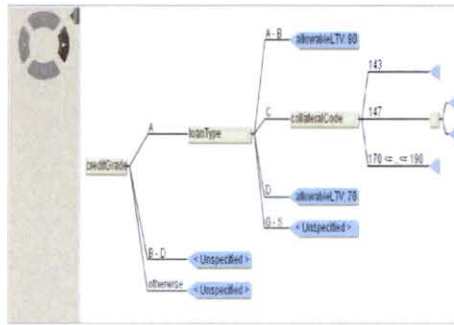




## Decision Trees

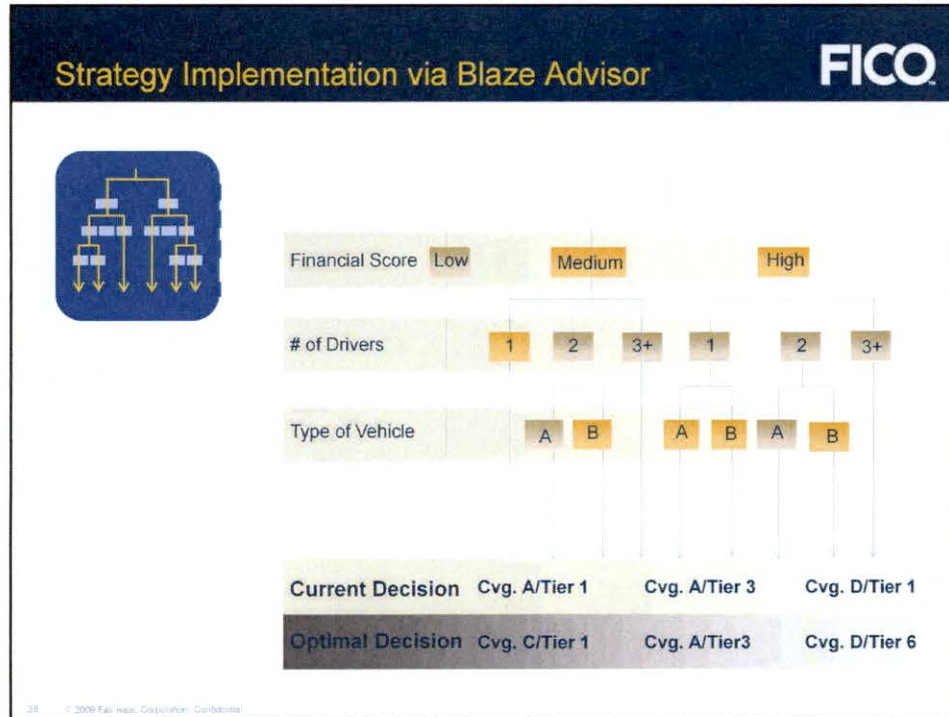
FICO

- » Conditions on branches, Actions on nodes
- » Uses business terminology to define conditions, actions
- » Graphical point-and-click development and maintenance
- » Visual difference comparison
- » Wizard-based set-up
- » Rule Maintenance Application support using applet technology



Auto-scaling UI always shows full sub-tree, regardless of scale

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**Proper Structuring:**  
*Promotes Enterprise Use of Rules*



- » Make business rules available throughout the enterprise
  - » Proper repository organization drives reuse, access control, enterprise adoption
- » Reuse business rules and components to quickly address new business areas
  - » Reuse enables corporations to rapidly address new opportunities by leveraging existing logic (new product definition, marketing campaign, LOB)
- » Keep a complete history and audit log of all changes to rules
  - » Version control enables support for roll-back and audit trails on changes
- » Provide content authoring to a broad audience
  - » Access control safely allows content owners from across the corporation to access rules
- » Support staging and release management requirements
  - » Stage and release decision services using standard SDLC processes

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**Scalable Multiplatform Deployment:**  
*Decision Services for the Enterprise*



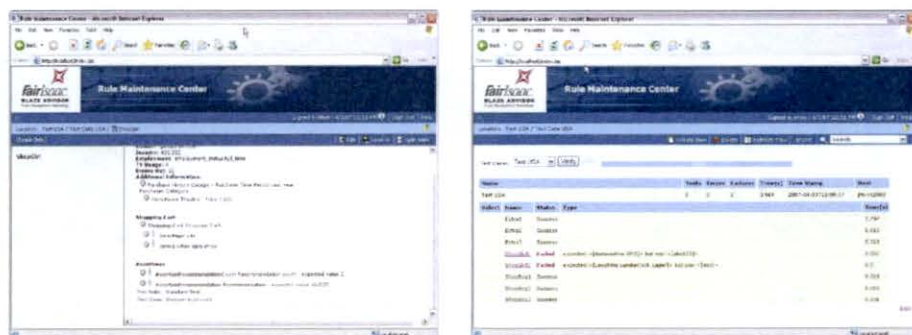
- » Deploy multiple decision services and manage them centrally
  - » Multiple decision services controlled through single deployment manager
  - » Deployment manager detects rule updates and deploys changes automatically
- » Deploy decision services across all platforms and architectures from a single source
  - » Re-use decision service definitions across J2EE, .NET, COBOL
- » Mission critical decision services supported with 24x7 services
  - » Deployment manager provides control and management of rules in the production system.

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## Testing via brUnit



- » Business users can test rule changes in the RMA
- » Business users configure and run test cases
- » Execution of previously defined test cases to ensure logic integrity
- » Test cases can run many data scenarios to provide "what-if" analysis



The second scenario is when business users configure and run test cases from the RMA. This serves two purposes: we can be sure the changes made by a business user did not break any test; and it gives business users the ability to configure tests to check if a new situation behaves as expected, in consequence of a rule's change.

**Rule Verification Service****Validate the rule logic by patented analysis tool to check the rule conditions and actions****Testing the Conditions**

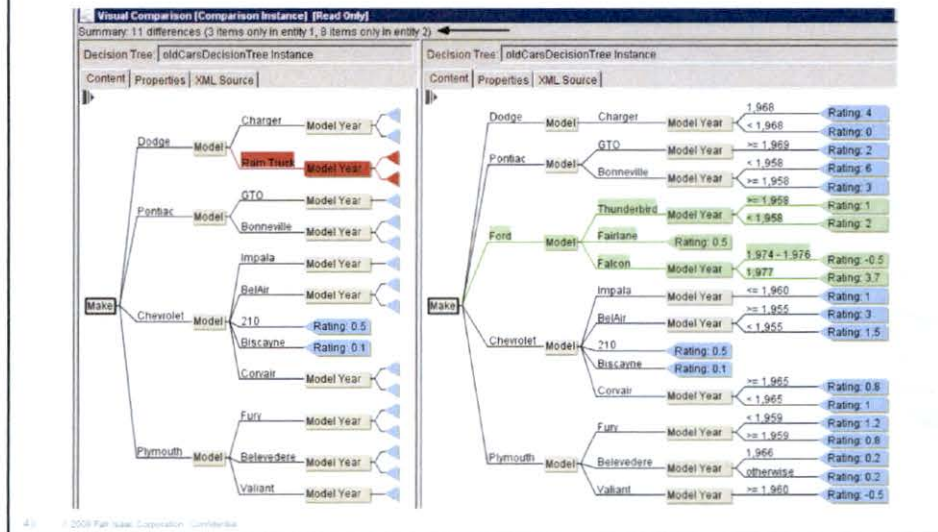
- » Redundant constructs
  - » Unused variables, properties, functional parameters and patterns
  - » Always true test conditions
  - » Always false test conditions
  - » Equivalent rule premises
  - » Equivalent rule flow branches and rule flows
  - » Subsumed rule premises (by less specific conditions)
- » Missing constructs
  - » Missing rules (when testing ranges and enumerations)
  - » Missing rule flow branches (testing ranges of flow variables)

**Testing the Actions**

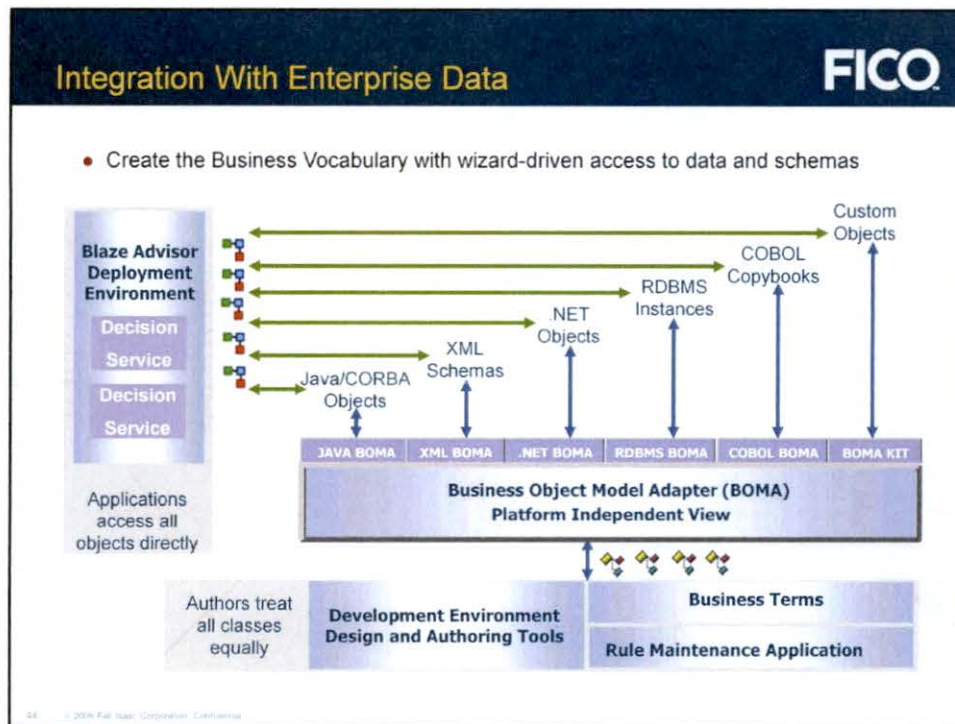
- » Malformed constructs
  - » Potentially un-initialized variables and properties
  - » Self-contradicting test conditions
- » Looping constructs
  - » Infinite procedural loops
  - » Redundant procedural loops
  - » Rule firing cycles
- » Other
  - » Extremely complex rule premise
  - » Semantic errors

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## » Graphical Diff applied to Decision Tree







The unique architecture of the BOMA allows:

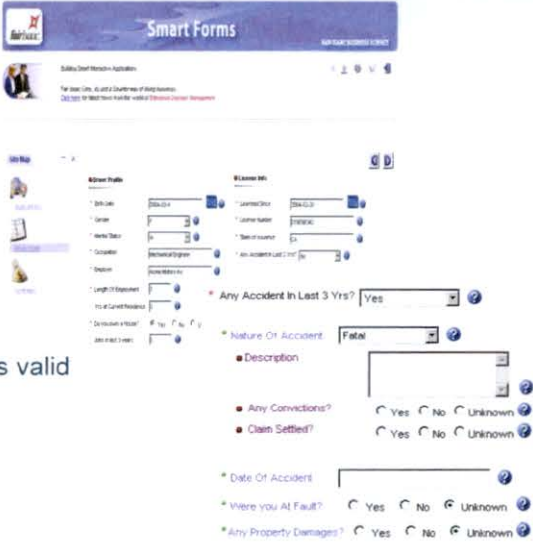
- The development environment to treat all classes equally, using a consistent approach
- The runtime system accesses objects directly for performance
- No duplication
- No mapping
- No additional complexity.

Designers can design against any object without having to worry where it came from the applications (rule maintenance or production) can access these objects in the most optimal way for high-performance.

**SmartForms:**  
*Building data-driven intelligent forms*

**FICO**

- » Object Model-driven
- » Validation rules
  - » Required fields
  - » Single field
  - » Field correlation
- » Trigger actions
  - » Set default value
  - » Invoke Web Service
- » Ensures collected data is valid



The screenshot displays the SmartForms application interface. At the top, there's a header with the 'Smart Forms' logo and a user profile section. Below this, the main form area is divided into two columns. The left column contains various input fields and dropdown menus, including 'Any Accident In Last 3 Yrs?' with a 'Yes' button. The right column contains a 'Nature Of Accident?' section with a 'Fatal' dropdown, a 'Description' text area, and several radio button options for 'Any Convictions?' and 'Claim Settled?'. At the bottom, there are more radio button options for 'Date Of Accident?', 'Were you At Fault?', and 'Any Property Damages?'.

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## Why Do I Need Simulation?

*Before deploying their rules, business users want to...*

- » Validate that their business logic produces the expected business results
- » Analyze results to identify risks and opportunities to improve strategies
- » Compare alternative strategies to see which best achieves business goals
- » Create reports for coworkers and managers to accelerate approval process



How can we be sure you are making the right decisions?

I need to add the latest regulations

I want to increase the number of pricing tiers



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## Simulate to Analyze Business Impact

### Blaze Advisor Decision Simulator

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Reduce risk & improve decisions before deployment



- » Understand business impact before deploying new or updated strategies
- » Avoid costly errors in strategies that might otherwise be missed
- » Use actual rule results to estimate outcomes & identify opportunities for improvement
- » Include simulation results within approval process to reduce time to Production

Sum	Development	Production
Description		
Projected Revenue	1276714.00	1209886.00
Marketing Cost	840250.00	843950.00
Expected Profit	426464.00	365936.00

Expected Profit Comparison between Champion and Challenger Strategies

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## Key Benefits of Decision Simulator



- » Understand business impact before deploying new or updated strategies
- » Avoid costly errors in strategies that might otherwise be missed
- » Use actual rule results to estimate outcomes & identify opportunities for improvement
- » Include simulation results within approval process to reduce time to Production

*Reduce risk & improve strategies before  
deploying business rules*

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What Makes Blaze Advisor Unique?

- » Interface designed for business user control
  - » Allows business users to own rule authoring and maintenance
  - » Patented, Industry-Leading Rule Verification- most comprehensive
  - » brUnit for Unit Testing and Regression Testing
- » Analytic integration into Decision Management Suite
  - » Importing analytics via PMML, Java
- » True multi-platform support
  - » Single Repository supports .NET, Java and COBOL
  - » Rule authoring and maintenance is done once, deployed anywhere
- » Developed for complex real world applications
  - » Proven deployments in large enterprise applications
  - » Rete III – unparalleled performance
  - » Complete Lifecycle Management with IT Governance

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There are many features that make Blaze Advisor unique but these are some of the key ones.

Interfaces designed for business user control

Automatically generate complete Web-based rule maintenance applications

Product maturity and technical innovation

18 years in rules-based technology. Blaze Advisor on 18th release in 6 years.

First to market with Decision Trees, Web-based rule maintenance, Ruleflows...

Agility in process management

Change rule logic at any time without interrupting production operations

Automatically incorporate rule changes in all running systems

Developed for complex real world applications

Manage complexity needed for multi-step decision processes

High performance and full testing and performance monitoring

Proven deployments in large enterprise applications

## Blaze Advisor Has a Track Record You Can Trust



- » 20+ years experience using rules management technology
- » Mature and stable: Release 6.7
- » Established: 500+ Blaze Advisor customers worldwide
- » A strong commitment to standards & an open technology
  - » WebSphere, WebLogic, Sun ONE, Oracle, JBoss app servers
  - » Ant build files
  - » EJB/J2EE, .NET, MTS/COM+, COBOL
  - » SQL databases, XML schemas/documents
  - » Service Oriented Architecture (SOA)
  - » BPM Integrations - FileNet, Lombardi, Metastorm, DST, webMethods, Savvion, Fujitsu, Oracle BPEL...

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## Optional FICO Component Explanations

- » Model Builder for Predictive Analytics
- » Xpress for Optimization

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## Questions & Answers

» Next Steps

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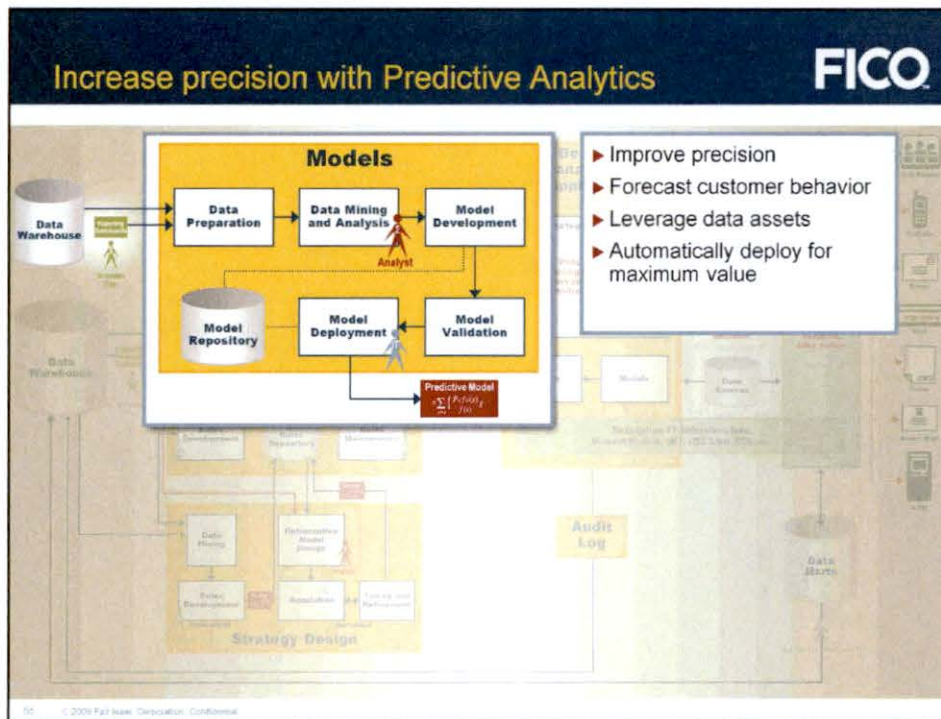




## Enabling Decision Management

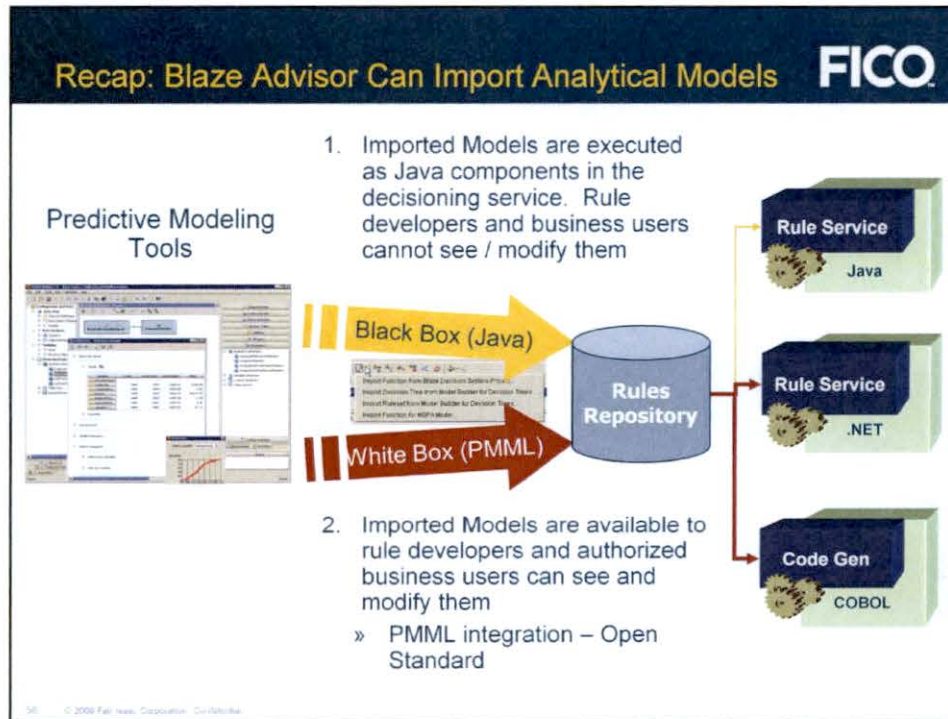
» Increase Precision with Predictive Analytics

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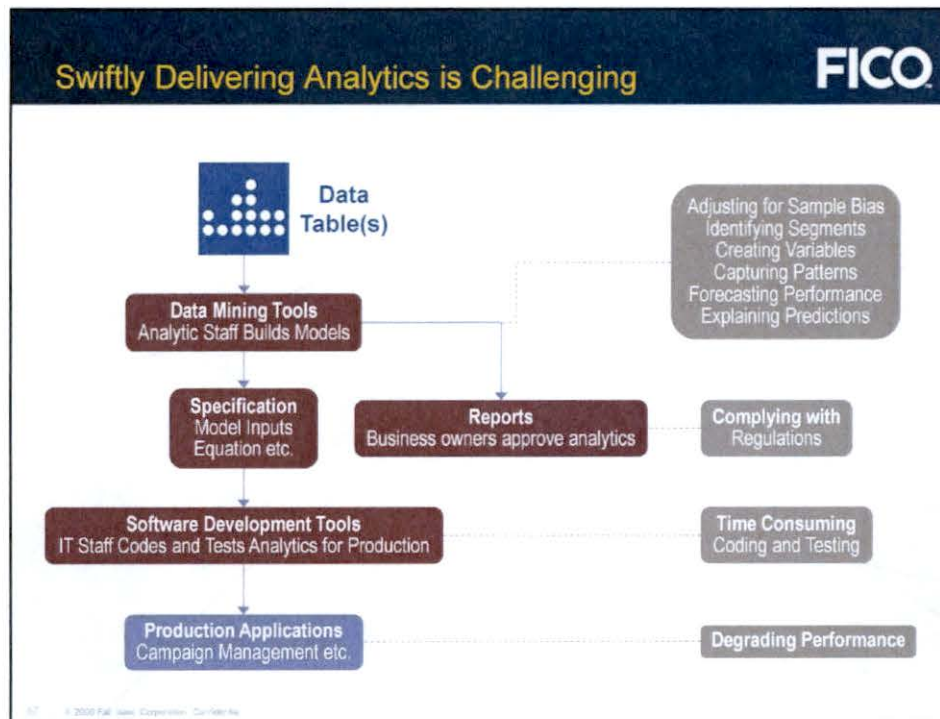


Predictive Modeling analyzes historic data in order to predict how likely it is that a customer will exhibit a specific behavior in the future. Predictive models are frequently used to boil down a large quantity of data about an individual into one number. The predictions coming out of the models are commonly used as input to decisions.

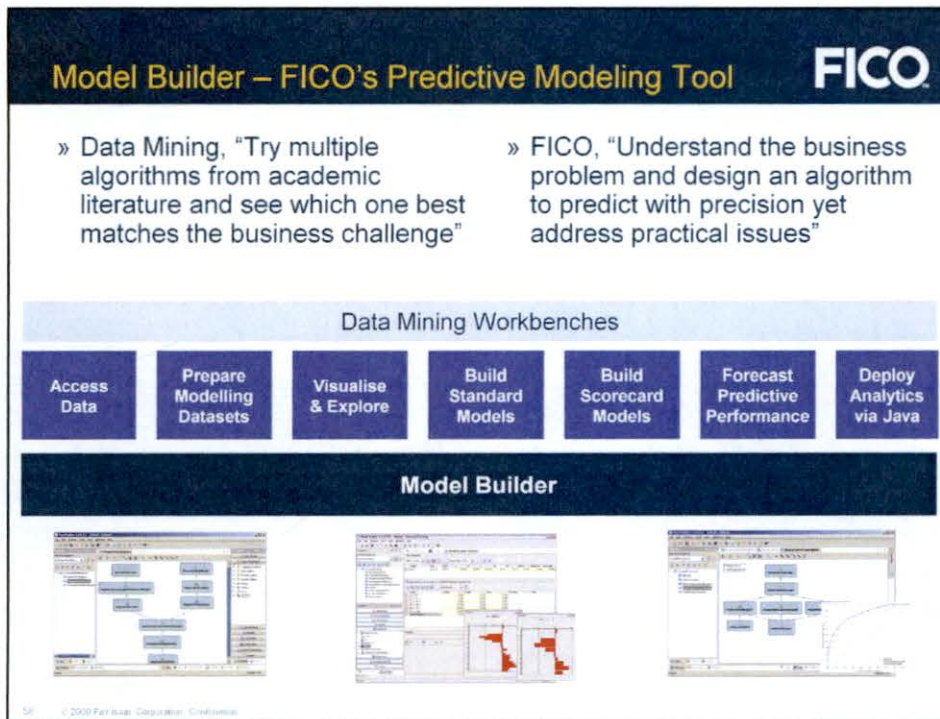








Delivering Analytics swiftly is complicated by many different factors including the data analysis, including transparency for regulatory compliance, implementing the model in production to standard IT development and testing and degrading performance of models overtime. Fair Isaac understands these challenges and has focused on helping clients deliver analytics quicker.




Model BuilderSE is comprehensive software tool that manages the entire modeling lifecycle with capabilities to access production data sources, view and analyze data, create variables, build and evaluate models, generate scores and deploy the models into production. Model Builder provides a comprehensive set of predictive modeling capabilities. By better predicting behaviors (e.g., marketing response, loan repayment, insurance losses, fraudulent transactions), leading corporations can increase the precision of their data-driven decision applications. The result can be a substantial impact on the bottom line.

In addition to facilitating the entire modeling lifecycle, Model Builder allows organizations to benefit from some of Fair Isaac's analytic innovations that include Segmentation ART™ and Data Spiders

**SEGMENTATION ART:** Adaptive Random Trees (ART) is a tool to help analysts find the best way to segment a population for the development of scorecards

**DATA Spiders:** Automatically searches through data to find metrics that can help predict people's future behavior

## Predictive Model Markup Language (PMML)

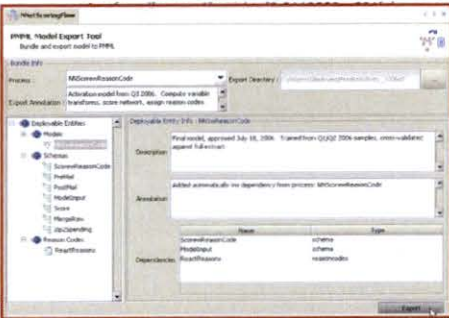


- » Capture model suite in PMML
  - » Model weights & structure
  - » Reason codes
  - » Input & output interfaces
  - » Model types included:
    - » Scorecard
    - » Linear regression
    - » Logistic regression
    - » Neural network
- » Document critical metadata
  - » Trace exported bundle to source project and model developer
- » Import to Blaze Advisor 6.7

```

- <NeuralLayer numberOfNeurons="2" activationFunction="tanh">
- <Neuron id="0" bias="1.4394778e-001">
- <Con from="income2" weight="1.8085394e-001" />
- <Con from="demoA" weight="1.6428517e-001" />
- <Con from="monthsInactive" weight="-1.6210760e-001" />

```



```

- <NeuralLayer numberOfNeurons="1" activationFunction="logistic">
- <Neuron id="2" bias="-9.2077750e-001">
- <Con from="0" weight="5.0548548e-001" />
- <Con from="1" weight="7.1809024e-001" />
</Neuron>
</NeuralLayer>
- <NeuralOutputs numberOfOutputs="1">
- <NeuralOutput outputNeuron="2">
- <DerivedField dataType="double" optype="continuous">
- <FieldRef field="isReactivated" />

```

Another key enhancement found in MB 3.5 is its new ability to export a rich model export bundle in PMML format. MB has always had the ability to deploy its models as compiled Java JAR files, and as you saw this morning, this sets up neatly in Blaze Advisor for a "black box" rule service.

With MB 3.5 and (upcoming) BA 6.5, we provide the "white box" deployment of predictive models.

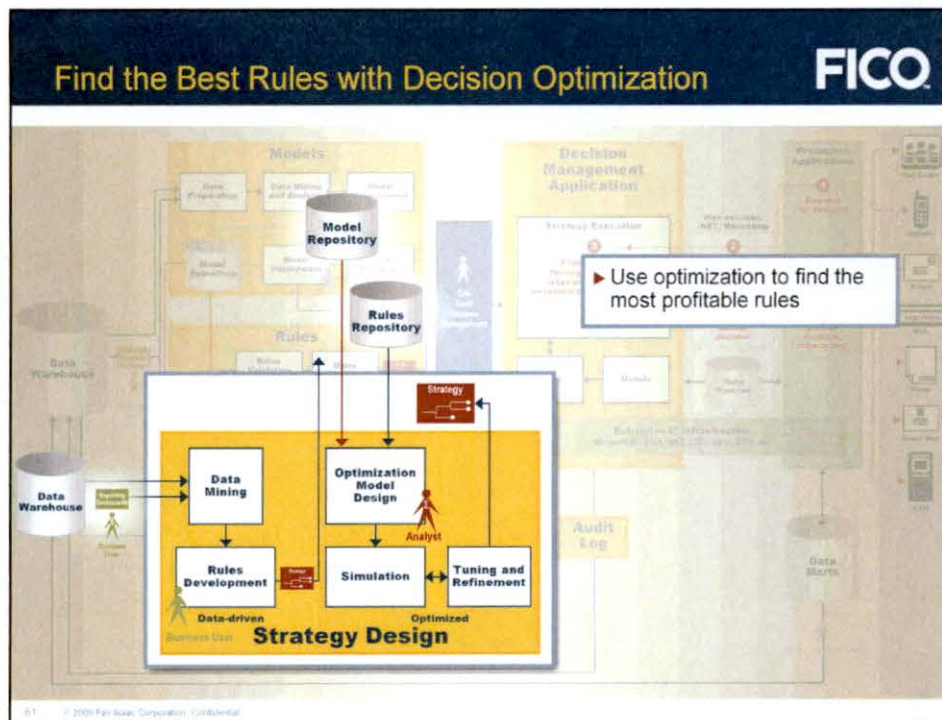




## Enabling Decision Management

» Find the Best Strategy with Decision Optimization

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Once you have a set of predictive models the next step in the progression is to develop optimal strategies based on business objectives and constraints to develop the best rules to drive business results.

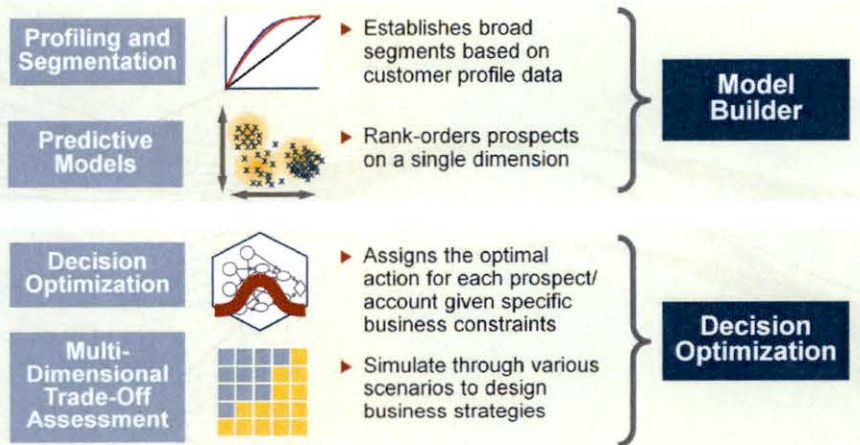


## Decision Optimization

*Find the Best Action to Take for Each Policy*

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*Subject to constraints on business metrics for the total portfolio...*



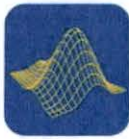
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Decision Optimizer lets you optimise business actions based on resource constraints, behavioural and economic measures, and business objectives. Decision Optimizer incorporates uncertainties and risk to design a single best strategy for achieving your business goals

# Efficient Frontiers

Visibility to Business' Key Metrics

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## EFFICIENT FRONTIER

Projected Consequences for Multiple Scenarios

